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United Nations Monitoring, Verification and Inspection Commission

Note by the Secretary-General

The Secretary-General has the honour to transmit to the Security Council the twenty-third quarterly report on the activities of the United Nations Monitoring, Verification and Inspection Commission (UNMOVIC). It is submitted by the Acting Executive Chairman of UNMOVIC in accordance with paragraph 12 of Security Council resolution 1284 (1999).

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Twenty-third quarterly report on the activities of the United Nations Monitoring, Verification and Inspection Commission in accordance with paragraph 12 of Security Council resolution 1284 (1999)

I. Introduction

1. The present report, which is the twenty-third submitted in accordance with paragraph 12 of Security Council resolution 1284 (1999), covers the activities of the United Nations Monitoring, Verification and Inspection Commission (UNMOVIC) during the period from 1 September to 30 November 2005.

II. Developments

2. During the period under review, the Acting Executive Chairman has continued the practice of briefing the respective Presidents of the Security Council, representatives of Member States and officials of the Secretariat on the activities of UNMOVIC.

3. During informal consultations in the Security Council on 6 September 2005, concerning the Commission's last report (S/2005/545), the Acting Executive Chairman raised the issue of the Iraqi National Monitoring Directorate (the Iraqi counterpart of UNMOVIC) and Iraq's continuing obligation to submit reports and notifications pursuant to various Council resolutions. Following that meeting, the Acting Executive Chairman wrote to the Permanent Representative of Iraq to the United Nations on 9 September requesting clarification on the functions and competencies of the National Monitoring Directorate and the relevant point of contact for UNMOVIC so as to address the issue of Iraq's monitoring reports to the Commission and the status of sites that had been subject to monitoring. In the letter, he repeated the readiness of UNMOVIC to assist Iraq in fulfilling its existing obligations under the relevant Security Council resolutions and, in particular, in the development of a suitable and appropriate national monitoring system, including a mechanism for the notification of imports to and exports from Iraq of dual-use items and materials. A response has not yet been received.

4. In September, the Acting Executive Chairman attended the General Conference of the International Atomic Energy Agency (IAEA) in Vienna. He also attended, together with UNMOVIC experts, the Carnegie Endowment International Non-Proliferation Conference in Washington, D.C., on 7 and 8 November.

Status of sites, dual-use equipment and materials subject to monitoring

5. In its previous reports, the Commission mentioned that it had contacted Iraq's neighbours to determine whether dual-use items subject to monitoring had found their way into or through their countries. On 18 October, the Permanent Representative of Saudi Arabia to the United Nations wrote to UNMOVIC stating that Saudi Arabia did not have any of the materials that are subject to the control of UNMOVIC and, in addition, that Saudi Arabia did not allow the entry or transit of those kinds of materials in or through its territories.

6. UNMOVIC imagery analysts have continued to review the status of sites subject to inspection and monitoring in Iraq and have noted that the number of sites cleaned to varying degrees has risen by only two from the previously reported total of 118. On the other hand, it has been noted that in the recently published report of the United Nations Environment Programme (UNEP) assessing environmental "hot spots" in Iraq, there is information about the Ouireej site, a large scrap yard located about 15 km south of Baghdad. The site was nominated by the Baghdad municipality from 2003 onwards as one of the dumping grounds for damaged and redundant Iraqi military and civilian vehicles, machinery and equipment. The UNEP report states that among the ordnance sighted at Ouireej were complete surface-to-surface missile bodies, as well as unexploded munitions and artillery rounds.

7. The Commission's imagery analysts have been assessing activities at sites by analysing images of specific locations over successive time frames. Of particular note is imagery from September, which shows that agricultural activity has started inside the perimeter of the former Muthanna State Establishment. This was once Iraq's prime chemical weapons production site, where the majority of chemical weapons destruction also took place. The site was subject to a protocol between Iraq and the United Nations Special Commission (UNSCOM) concerning specific procedures to be followed by Iraq regarding the management of sealed structures and areas within the site perimeter. In the Commission's nineteenth quarterly report (S/2004/924), it was noted that the Iraq Survey Group had reported that bunkers containing rockets filled with the chemical warfare agent Sarin and nearly 200 tons of cyanides and arsenic compounds had been breached and some materials had been removed. The Iraq Survey Group further reported that stockpiles of chemical munitions were still stored in the bunkers, which tested positive for the presence of chemical warfare agents. There may well be health, safety and security hazards associated with the agricultural activities now only some 500 m from the bunkers. Previously all agricultural activity in the area had been outside the perimeter of the site and more than 1 km from the potentially hazardous bunkers.

Compendium

8. Work continues on some parts of the compendium of Iraq's proscribed weapons and programmes. A draft of the summary was circulated to the members of the College of Commissioners for their comments. An extract containing the procurement section of the summary of the compendium is attached as an annex to the present report. It illustrates the procurement methods used by Iraq.

III. Other activities

External technical expert panel review of the ongoing monitoring and verification plan (missile provisions)

9. In its last report (S/2005/545), UNMOVIC noted that the College of Commissioners had been briefed on the results of the expert panel review of the missile provisions of the ongoing monitoring and verification plan approved by Security Council resolution 715 (1991). Given the change in circumstances in Iraq since 2003 and the advances in science and technology and the benefit of the experience of UNSCOM and UNMOVIC in monitoring and verification, the Commission reviewed the methodology and process of monitoring dual-use missile

facilities and related material. In June 2005, UNMOVIC convened a panel of external non-governmental technical experts (from Argentina, France, the Netherlands, Romania, the United Kingdom of Great Britain and Northern Ireland and the United States of America — an expert from the Russian Federation was invited but was unable to attend) to conduct an independent review of the missile provisions and associated annex of the ongoing monitoring and verification plan. They were asked to review, on a technical basis, the appropriateness, applicability and logic of the existing provisions and annex.

10. In making its recommendations, the panel based its work on the assumptions that any new administration in Iraq would adopt appropriate national export and import legislation and that an organization similar to the National Monitoring Directorate would exist to interface with UNMOVIC. Based on those assumptions, the panel determined that future monitoring should be undertaken in a more focused manner but that there should be a transitional period during which confidence could be built that the monitoring and verification processes were robust enough either to deter proscribed activities from taking place or to detect them. The panel noted that a more focused approach to monitoring would not impact the depth of specific monitoring methods of key activities in the missile area.

11. In undertaking their review, the panel concentrated more on a monitoring model than on revising the list of dual-use items, while at the same time considering several key issues that had been identified by UNMOVIC from its monitoring experience.

12. One such issue was the question of range and payload for ballistic missiles and the ability to trade one for the other. The panel recommended that a separate, specific limitation should be placed on payload in addition to that existing on range (150 km). That would reduce not only any confusion in interpretation of the prohibition but also the potential for a significant range increase resulting from any trade-off in payload. It was recommended that initially the prohibition threshold should remain 150 km for range and include 300 kg for payload; after the transitional period those limits could be raised to 300 km and 500 kg, respectively, in line with values adopted under the Missile Technology Control Regime.

13. The panel considered the present situation whereby there are two listings of dual-use items relating to missiles. The earlier, more general version (S/1995/208 and Corr.1) is used for activities under the monitoring and verification plan, and the later, more specific version (S/2001/560, annex) is used for the purposes of notification to UNMOVIC of the export/import of dual-use items and materials under the mechanism established under Security Council resolution 1051 (1996). The panel proposed that there be only one list that would serve both purposes and that, to that end, a new list should be created based on an update of the 2001 version. The panel provided some proposed technical updating of the listings, but largely left that activity to a later time for an expanded group comprising experts in each missile technical area (e.g., guidance and control, production equipment and propellants).

14. The panel reviewed the overall monitoring strategy in the light of the changed circumstances in Iraq and past monitoring experience. It considered that effective future monitoring would best be based on the key processes and/or technologies

required in the production of delivery systems.[1] Assuming that Iraq would restart non-proscribed indigenous production of delivery systems in the future, the key processes could not be specifically identified beforehand, given that most of the previously used infrastructure is no longer there. Once processes had been chosen and installed, key activities — choke points — could then be defined and monitored through appropriate methodologies, which would provide effective, yet overall less intrusive, monitoring. That approach would also lead to the identification of the information that Iraq would be required to declare periodically. A further consequence of the lack of infrastructure is that key equipment would need to be imported. The export/import monitoring mechanism would thus assume greater importance. Therefore, the panel recommended that the future monitoring and verification system be based on three key pillars: a revised list of dual-use items for export/import monitoring; choke points associated with the adopted production processes; and declarations from Iraq on sites and activities involved with relevant delivery systems.

15. A key issue considered by the panel was the question of how adequately the monitoring plan covered cruise missiles and, more generally, unmanned aerial vehicles, particularly given the dramatic increase in development of the latter in recent years. The panel determined that the existing range prohibition is adequate for unmanned aerial vehicles but proposed clarification on payloads because of the modular payload configurations now available to unmanned aerial vehicle systems that allow for easy adaptation. The panel recommended that the monitoring of unmanned aerial vehicles be concentrated primarily on autonomous navigation and flight control systems since this is the key factor offering the possibility of controlled flight to proscribed ranges.

IV. Other issues

Field offices

16. The core staff of UNMOVIC in Baghdad has been reduced from nine local staff members to seven. The staff continues to maintain the existing offices, laboratories and other equipment at the Canal Hotel. Blockage of former entrances and the use of steel doors has reinforced physical security at the Canal premises.

17. The Cyprus field office consists of four staff members. Whenever appropriate, the staff of the field office has continued to work with customs in Larnaca to facilitate shipments of other United Nations agencies and to provide logistical support to the United Nations Peacekeeping Force in Cyprus and to the United Nations Assistance Mission for Iraq.

18. On 26 October, the Government of Cyprus agreed with the United Nations to extend the validity of the agreement establishing the UNMOVIC field office in Larnaca for another year, until 30 October 2006. The Commission remains grateful to the Government of Cyprus for its support.

[1] The panel recommended that the term "delivery systems" be used in the current context instead of "ballistic missiles", the term used by the Security Council in resolution 687 (1991), noting that in later Security Council documents that term had been elaborated to include essentially all unmanned systems capable of delivering payloads to proscribed distances.

Staffing

19. At the end of 2005, there will be a total of 41 UNMOVIC core staff at the Professional level, including 22 nationalities and eight women.

Technical visits, meetings and workshops

20. UNMOVIC continues to follow up on dual-use technology developments and to assess the implications for its mandate and the application of new technologies in detection, monitoring and verification.

21. An UNMOVIC expert from the roster attended Biotechnica, a biotechnology conference held in October in Hanover, Germany, where manufacturers of biotechnology and detection technology displayed their latest lines of products. UNMOVIC experts also attended the American Chemical Society meeting in New York in early November. At the meeting, the newest achievements in the areas of processing equipment and technologies subject to the UNMOVIC mandate were presented. Contacts were made with representatives of companies that might potentially provide supplies and inspection equipment to UNMOVIC, when necessary.

22. In early October, an UNMOVIC expert was invited to give presentations at the Biosecurity Centre in Baltimore, United States of America, and the Centre for Health Promotion and Preventive Medicine at Aberdeen Proving Ground, Maryland, United States of America on verification technologies, methods and procedures applied by UNMOVIC.

23. In mid-October, an UNMOVIC expert was invited to attend (at no cost to the Commission) an on-site inspection workshop of the Preparatory Commission for the Comprehensive Nuclear-Test-Ban Treaty Organization in Australia, where he gave a presentation on the operational aspects of inspections.

24. In mid-November, a technical seminar was conducted by UNMOVIC in New York. An expert from a United States university gave a presentation on the impact of the use of small quantities of biological agents and possible means of detection and analysis.

25. UNMOVIC experts were invited to attend, as observers, the tenth session of the Conference of the States Parties to the Chemical Weapons Convention, which was held in the Hague, from 7 to 11 November 2005. UNMOVIC staff held informal discussions with experts from the Organization for the Prohibition of Chemical Weapons and visited the Organization's laboratory and equipment stores to discuss sampling and analytical methods and equipment storage methods to ensure long-term viability.

26. At the request of the Cartographic Section of the Department of Peacekeeping Operations of the United Nations Secretariat, UNMOVIC made available a satellite imagery expert to conduct a training programme for six peacekeeping missions on an advanced geographic information system software system. The course was conducted in Burundi from 30 October to 15 November. All costs were borne by the Department of Peacekeeping Operations.

Training

27. In the period under review, UNMOVIC conducted one training course in Canada from 17 to 21 October. It was the first multidisciplinary technology course to develop a better understanding of the technologies and equipment involved in operation of refineries and petrochemical plants and their relevance to the monitoring of the mandate of UNMOVIC. A total of 20 experts from 17 Member States and six UNMOVIC headquarters staff participated in the course. The Commission is grateful to the Government of Canada for its support for this training course. On 28 November, a training course on monitoring technologies used in the production of solid propellant missiles commenced in Argentina.

V. College of Commissioners

28. The UNMOVIC College of Commissioners convened its twenty-first regular session in New York on 21 and 22 November. Observers from IAEA and the Organization for the Prohibition of Chemical Weapons also attended.

29. The Acting Executive Chairman briefed the Commissioners on the activities of UNMOVIC since their last meeting and on the planned activities for the next quarter. In addition, presentations were made on:

(a) UNMOVIC archives: an examination of some possible future issues;

(b) Export/import monitoring mechanism and end-use verification: UNMOVIC experience and lessons learned.

30. The College expressed its appreciation to the Acting Executive Chairman for his introductory statement and welcomed the ongoing and planned future activities for 2006 as outlined by him. It also welcomed the presentations on the UNMOVIC archives, the export/import verification mechanism and the imagery showing new agricultural activities occurring at the Muthanna State Establishment, Iraq's former chemical warfare production site, which may have health, safety and security implications.

31. There was an exchange of views on the Acting Executive Chairman's statement. The most important matter discussed related to ways in which the Council could move forward on the issue of the UNMOVIC mandate, including the process that could be followed to close the disarmament file. It could include a review of the inspection findings of UNMOVIC and the Iraq Survey Group report, in the light of criteria for disarmament set out in resolution 687 (1991), and the commitments of the Governments of the United Kingdom of Great Britain and Northern Ireland and the United States of America in their letter of 8 May 2003 addressed to the President of the Security Council (S/2003/538) and also the key remaining disarmament tasks identified by UNMOVIC in 2003, with a view to minimizing the residue of uncertainty. It was further recognized that the process of revisiting the UNMOVIC mandate with a view to closing the disarmament file, as well as any other steps, would be a matter for the Security Council.

32. There was also an exchange of views on the summary of the compendium that had previously been circulated to Commissioners for comments. It was noted that the summary, after finalization, would be made available through the Commission's reporting mechanism to the Council, and thereafter through the UNMOVIC website.

The full compendium, however, had proliferation-sensitive information and would have to be sanitized prior to making it widely available. Therefore, it might be necessary to produce two versions of the full compendium: one containing all the material that would be kept secure and another with proliferation-sensitive material removed. The College expressed its deep appreciation to the staff for its work on the compendium.

33. An initial discussion on the Commission's archives took place concerning options for the future. The College asked for a working paper on this matter to be circulated to the Commissioners as a basis for considering what advice to give to the Acting Executive Chairman at the next session. Members of the College offered assistance to the Commission on national procedures for dealing with archived material.

34. It was tentatively decided to hold the next meeting of the College on 21 and 22 February 2006.

35. In accordance with paragraph 5 of resolution 1284 (1999), the Commissioners were consulted on the content of the present report.

Annex

Iraq's procurement for its weapons of mass destruction programmes[1]

A. The scope and role of procurement from the 1970s to 1990

1. In the early 1970s, Iraq embarked on a programme to modernize its industrial infrastructure and upgrade its armed forces. It created a military and industrial complex that incrementally incorporated weapons programmes which were heavily dependant on imports of foreign technology, arms, equipment, tools, parts and materials. The foreign assistance varied from supplies of items and sales of licensed technology to the construction of turn-key facilities in Iraq. With total control over Iraq's considerable oil resources and ongoing development of the petrochemical industry, the Government of Iraq was perceived as a solid business partner by its foreign suppliers.

2. In the course of investigation and verification by UNMOVIC, it was established that in the period from the mid-1970s to 1990, more than 200 foreign suppliers had provided major critical technology, equipment, items and materials that were directly used by Iraq for its chemical warfare, biological warfare and missile programmes. The suppliers included governmental agencies and organizations, private companies and individuals who acted as brokers and middlemen. About 80 branches of foreign banks outside of Iraq were involved in transactions related to those acquisitions. In addition, dozens of trans-shipment companies were involved in the delivery of items and materials to Iraq. While there were cases where suppliers were aware of the final end-use of equipment and materials delivered to Iraq, there were also cases where the providers were unaware of the intended end-use or end-user of the items they sold.

3. From the 1970s to the mid 1980s, Iraq procured technology, equipment and materials from foreign suppliers, manufacturers and distributors. During this period, there were no international controls over the export of dual-use chemical and biological items or missile technology.

4. The mechanics of the procurement were relatively simple at that time. They involved the creation of operational accounts in Iraqi banks, the Central Bank of Iraq and the Rafidain Bank, corresponding accounts in foreign banks, direct interactions with prospective suppliers and the preparation and execution of contracts. The shipping of goods to the point of entry in Iraq was normally the responsibility of suppliers.

Tightening trade controls

5. In 1984, in response to the findings of the United Nations special investigatory mission that chemical weapons had been used in the Iran-Iraq war, a number of Governments introduced systems of licensing to govern the export of some chemicals that could be used for the production of chemical weapons. In 1985, a

[1] The information supplied in the present document has been limited to what is relevant to the mandate of UNMOVIC: chemical and biological weapons and delivery systems with a range greater than 150 km.

group of countries that came to be known as the Australia Group collaborated on developing and implementing such measures as an informal mechanism to harmonize measures taken individually. Those measures allowed exporting or transshipping countries to minimize the risk of unknowingly assisting chemical weapons proliferation. Additional measures involving the licensing of the export of dual-use chemical and biological equipment and related technology were introduced by members of the Australia Group later in the 1980s.

6. The Missile Technology Control Regime was established by seven States in 1987 as an informal and voluntary group of countries that decided to coordinate national export licensing efforts as a measure of preventing proliferation. The aim of the Missile Technology Control Regime is to restrict access to non-members of missiles, complete rocket systems, unmanned aerial vehicles and related technology for those systems capable of carrying a 500 kg payload at least 300 km and systems intended for the delivery of weapons of mass destruction.

7. As Iraq has acknowledged, measures undertaken by members of the Australia Group, the Missile Technology Control Regime and other individual States significantly affected the development of Iraq's chemical, biological and missile programmes in the late 1980s. Iraq's chemical warfare programme started to experience procurement difficulties, and thus shortages in precursor chemicals and equipment for the production of chemical warfare agents due to the newly introduced export controls. Its biological warfare programme failed in its attempts to procure fermentation equipment for a dedicated biological warfare production facility. The Missile Technology Control Regime guidelines restricting transfers to non-members impacted the implementation of Iraq's project to develop a two-stage missile jointly with a foreign country and slowed down progress in the development of other missile projects.

Iraq's response

8. Those measures, however, did not completely stop the flow of dual-use equipment and materials to Iraq due to the following reasons:

(a) Iraq established a sophisticated procurement network consisting of a long chain of brokers, intermediaries, bank accounts and transportation companies that enabled it, if necessary, to procure items using false end-user certificates issued for non-Iraqi third parties (see chart 1);

(b) After experiencing increasing problems in importing technology and materials from States that had implemented appropriate licensing systems, Iraq largely switched its procurement efforts to companies or subsidiaries that operated in countries where such measures had not yet been developed, introduced or fully implemented;

(c) Mindful of the difficulties it had experienced in the acquisition of dual-use equipment and materials and the likelihood that such difficulties would increase in the future, Iraq attempted to procure and store some items in excessive quantities in order to secure and meet possible future needs.

9. Consequently, in order to continue the acquisition of goods, Iraq tried to adjust its procurement network to meet emerging international trade norms. Those changes involved the use of legitimate commercial organizations in Iraq, such as the State Organization for Oil Refineries and Gas Industry, and governmental trading

agencies and companies, such as the Technical and Scientific Materials Importation Division, as front companies for the procurement of dual-use items and materials. The State Organization for Oil Refineries and Gas Industry handled contracts for Iraq's chemical warfare programme under the cover of the oil industry, and the Technical and Scientific Materials Importation Division was an acquisition unit to support activities within the Technical Research Centre, which included Iraq's biological warfare programme.

10. Depending on the nature of the goods procured, acquisitions were also made through other agencies that could better provide a cover for them. For example, some laboratory equipment and materials used by the biological warfare programme were procured through the Ministries of Agriculture, Oil and Health, and some machine tools for missile projects were procured through the Ministry of Industry.

11. Further adjustments included the use of networks of brokers and middlemen (see chart 2). Operating from offices registered in third countries where end-user certificates were issued, the brokers and middlemen acted between Iraq's front importation companies and foreign trading companies, thus preventing Iraqi companies from directly contacting foreign manufacturers and affiliated official distributors. Foreign trading companies, acting on behalf of brokers and middlemen, then procured the required goods from manufacturers and distributors. To cover the final destination of goods, brokers and middlemen arranged for multiple trans-shipments by freight handlers. The goods were not delivered to Iraq but to a neighbouring country in the region, where they were transported to Iraq by an Iraqi shipping company acting on behalf of the end-users or their agencies (see chart 3).

12. The length of the procurement chain depended on the geographic location of the manufacturers and the existing trade regulations in their countries. Accordingly, the creation of additional bank accounts in multiple foreign banks was required to support such a sophisticated procurement mechanism at each phase and location of its functioning, significantly increasing the final cost of items and materials procured in this manner. Iraq procured over 1,000 tons of precursor chemicals for the production of chemical warfare agents using the mechanism outlined above. In one case, Iraq procured several hundred tons of a key chemical precursor from a foreign supplier using a false end-user certificate.

13. To bypass extensive procurement procedures that would involve a paper trail, Iraq often entered into cash deals with foreign brokers and individuals, when they were accepted. The cash was delivered to Iraq's governmental institutions abroad and disbursed by Iraqi officials affiliated mainly with the Iraqi Intelligence Service.

14. The successful procurement of dual-use foreign technology, equipment, items and materials was crucial for Iraq's development of all of its proscribed weapons programmes:

(a) In the area of chemical weapons, most of the production plants and units constructed and used by Iraq to manufacture chemical warfare agents were designed by foreign contractors (but not as dedicated chemical weapons agent production plants). The vast majority of the chemical processing equipment came from foreign suppliers, and about 95 per cent of all precursor chemicals used for the production of chemical warfare agents was procured outside Iraq;

(b) In the area of missiles, Iraq relied on imported components for its indigenous missile systems. Iraq also imported machinery, tools and raw materials in an attempt to produce indigenously some missile systems and components;

(c) In the area of biological weapons, equipment used for biological warfare research and development, most equipment used in the production of biological warfare agents and bacterial isolates and other items, such as bacterial growth media, were also procured from foreign suppliers. In contrast to chemical weapons, for which specific equipment was procured directly for their production, because of the problems involved with imports during the late 1980s, the equipment used for the production of biological warfare agents was largely taken from facilities that had earlier acquired the equipment for legitimate purposes. In addition, Iraq utilized civilian facilities, including a plant constructed by a foreign contractor, to produce vaccine against foot-and-mouth disease, for the production of biological warfare agents.

Munitions

15. Iraq's chemical warfare programme relied mainly on the adaptation of conventional munitions for the dispersion of chemical warfare agents. Those munitions were initially imported from foreign sources as either empty conventional munitions or as specifically designed chemical weapons. Iraq soon developed a significant capability to indigenously produce any number of types of chemical warfare munitions. The munitions chosen by Iraq for its chemical warfare programme were linked to the availability of suitable delivery systems, such as artillery guns, rocket launchers, aircraft and missile systems. Some of those munitions were later used by Iraq for biological warfare agents. Thus, the acquisition of foreign conventional munitions, their parts and components and means to manufacture them was another part of the procurement efforts in support of Iraq's proscribed weapons programmes.

16. In the early 1980s, Iraq contracted a foreign company to perform a number of static and dynamic field tests, outside Iraq, of conventional artillery projectiles filled with materials to simulate chemical weapons and artillery rocket warheads specifically designed to hold liquids of a density similar to the chemical agent mustard. The performance characteristics, such as the nature and extent of dispersion of the liquid payload, were evaluated as were the optimal parameters, such as the burster tube length and charge strength, thereby indicating the prospective use of those munitions. After the tests had confirmed the suitability of such shells and warheads, Iraq procured assemblies for 50,000 artillery projectiles and 25,000 rockets from that company for its chemical warfare programme.

17. Another company supplied Iraq with an additional 35,000 pieces of similar artillery projectiles. A third foreign company supplied Iraq's chemical warfare programme with 22,000 rockets with several different versions of warheads, some designed to hold a payload with characteristics that matched particular chemical warfare agents Iraq had produced. The same company also supplied Iraq some 6,500 rockets with warheads specifically designed to hold the chemical warfare agent Sarin.

18. While continuing to import munitions that were suitable for its chemical warfare programme, Iraq also tried to achieve a higher degree of self-reliance in munitions production. Iraq was able to produce indigenously artillery and bomb

casings and to assemble a variety of aerial bombs using manufacturing equipment and components that had been imported for the production of conventional munitions.

Procurement data

19. Given the critical role that dual-use technology, equipment and materials acquired from foreign suppliers played in Iraq's development of its weapons of mass destruction programmes, the evaluation of procurement data proved to be one of the major tools for the investigation, mapping and verification of Iraq's declarations concerning such programmes.

20. Procurement data is a combination of the information, documents and records relating to specific actions taken by Iraq for the acquisition of items and materials. They include: communications and negotiations with prospective suppliers; notes of meetings to discuss requirements; tenders describing services required and items and relevant specifications; offers made by suppliers; and the preparation and implementation of contracts, including insurance documents, bills of lading, transshipment information, customs documentation and final delivery certifications of contract implementation by end-users. Procurement information is also available through financial statements, such as the opening of operational accounts in corresponding banks issuing letters of credit and a variety of money transfers from the accounts of end-users in Iraq to Iraqi banks involved in the transactions.

21. The experience of United Nations verification in Iraq shows that despite Iraq's extensive concealment policy and practices, it was still possible to find evidence of its procurement activity. The nature of the procurement process was such that multiple fingerprints of past acquisitions existed not only at various organizations in Iraq, including ministries, agencies, establishments and banks, but also outside Iraq, in countries of suppliers and third countries through which goods were transshipped. United Nations inspectors obtained data from the following sources:

(a) Procurement data provided by the Governments of former suppliers to Iraq was the major source of information at the beginning of the verification process. It provided an important insight into Iraq's acquisitions in connection with its proscribed weapons programmes and helped determine the completeness of Iraq's declarations. However, the degree of cooperation by Member States in providing such information varied, and several important aspects of Iraq's procurement activities could not be clarified with former suppliers and their respective Member States due to their unwillingness to disclose the nature and extent of their assistance to Iraq's weapons programmes. The demonstrated ability of the United Nations verification body to maintain the confidentiality of information provided was an important prerequisite for Member States to maintain the supply of such information. Member States provided their most sensitive procurement information only after they had been satisfied that the United Nations verification body was successfully securing such information;

(b) Direct contacts with former suppliers (legal entities and individuals) established with the support of Member States and independently by the United Nations provided first-hand information on Iraq's requirements with regard to specific items and materials, their types and quantities and any special adaptations, and on the performance of contracts Iraq had concluded;

(c) Another important source of information was data collected by individual Member States and shared with the United Nations inspectors. That data included very specific information on contacts among various Iraqi agencies, facilities and third parties, middlemen and suppliers outside Iraq;

(d) The evaluation and analysis of the procurement data provided by Iraq in its declarations was another important source of information. While Iraq was aware that the United Nations inspectors had obtained information from some of its foreign suppliers and other sources, it was not aware of the exact nature or scope of the information provided. As a result, in many cases Iraq unilaterally provided information and identified suppliers that had not been known to the inspectors;

(e) Through on-site inspection activities, inspectors were able to identify the origin of the items and materials and the manufacturers and supplying organizations from brands, serial/model numbers, labels, packaging and shipping markings on crates that often contained the code identification of the end-users. They included chemical processing and biological equipment, precursor chemicals, bacterial growth media and munitions acquired from foreign suppliers;

(f) Document searches at various facilities in Iraq, including ministries, agencies, companies and facilities that were involved in different stages of the procurement process, from the preparation of tenders and relevant specifications to the acquisition of goods and their shipment to Iraq, provided information;

(g) Inspections of bank branches in Iraq and the evaluation of the accounts of organizations and establishments were other sources of information. To be more productive, that process required preliminary knowledge and understanding of the organizational structure of Iraq's proscribed programmes, their affiliation, budget and finance. Codes of bank accounts, contracts and letters of credit contained distinctive identifiers of budgeting organizations that financed the procurement;

(h) Interviews with Iraqi personnel at all levels involved in procurement, from senior managers to the truck drivers who transported the procured goods, also proved to be an effective tool in obtaining relevant information.

22. In several instances, procurement information was absolutely critical and enabled United Nations inspectors to make significant progress in the verification of Iraq's proscribed programmes:

(a) In the missile area, information provided by a former foreign supplier on Iraq's acquisition of operational missiles, including the quantity and serial numbers, was critical in the efforts to establish the material balance of those missiles;

(b) In the chemical area, very specific procurement data provided by suppliers helped inspectors identify dozens of items of undeclared chemical process equipment that had been procured for Iraq's chemical warfare programme;

(c) In the biological area, information provided by a former supplier, who had been identified through the examination of the original packaging of materials found in Iraq, included data on the specific types and quantities of bacterial growth media that Iraq had procured from it. That information was used by United Nations inspectors in pressing Iraq to disclose elements of its offensive biological warfare programme, which Iraq reluctantly did in 1995.

B. Sanctions and procurement

Period from 1991 to 1995

23. Following Iraq's invasion of Kuwait in 1990, the Security Council adopted a number of resolutions that imposed trade sanctions and weapons prohibitions and laid the basis for United Nations verification of Iraq's compliance with its obligations to eliminate its holding of weapons of mass destruction and related programmes.

24. It became apparent that even under the sanctions, certain dual-use items, such as vaccines, were being legitimately exported to Iraq. It is also known that during this period Iraq negotiated with foreign companies for the possible procurement of a variety of military and dual-use items, but there is no evidence that any of the items and materials sought during that period were actually used by Iraq in proscribed weapons programmes. Therefore, an export/import monitoring mechanism had to be introduced and made operational to cover such issues.

25. During the period from 1993 to 1995, a foreign individual acting under contract with several of Iraq's missile establishments and in close collaboration with the Iraqi Security and Intelligence Service visited three countries in order to obtain parts and components of range-proscribed missile guidance and control systems. In one country, he was able to find suppliers of those goods, to establish an office, to open multiple bank accounts and to procure and ship to a third country various missile parts and components through a chain of private companies and intermediaries. One of the shipments was intercepted by the authorities of the third country en route to Iraq, which subsequently handed over to the United Nations missile parts and components from previous deliveries.

Period from 1995 to 1998

26. In 1995, the Security Council authorized Member States to import petroleum and petroleum products originating in Iraq in order to fund the provision of humanitarian goods. It had already been noted that even under sanctions, certain dual-use goods, such as vaccines, had been legitimately imported into Iraq. In view of the likely increase in trade that the sale of oil would likely bring, it was decided to pursue the establishment of an export/import mechanism, as called for in the monitoring plan. Such a mechanism was established in 1996, which provided information to United Nations inspectors on exports and imports of relevance and was expected to be operational regardless of the status of sanctions.

27. During the period from 1996, when the implementation of the mechanism began, up to the withdrawal of the United Nations inspectors from Iraq in 1998, there was no evidence that Iraq had attempted to use any of its declared imports of procured goods for proscribed programmes. However, several instances of the procurement by various Iraqi facilities of declarable dual-use items and materials outside the scope of the mechanism were noticed by the inspectors. Iraq explained that those foreign goods had been obtained from local private trading companies, which it described as procuring from the "local market". The so-called local market was a sign of the development in Iraq of new procurement patterns involving private entrepreneurs and their networks rather than governmental institutions and trading companies. That procurement pattern was further developed and was used

frequently in Iraq's acquisitions after the departure of inspectors from its territory in December 1998.

Period from 1999 to 2002

28. During the absence of the United Nations inspectors in Iraq from 1999 to November 2002, Governments of suppliers continued to provide to UNMOVIC notification of exports to Iraq as required under the export/import monitoring mechanism. However, Iraq did not provide its corresponding notifications to the United Nations during that period. Nevertheless, prior to the resumption of inspection activities in November 2002, Iraq provided aggregated data for that period on the procurement of items and materials subject to notifications in a set of its semi-annual monitoring declarations. Iraq also provided UNMOVIC with the notifications that had been continuously prepared by it from 1999 to 2002 but not sent to the United Nations.

29. A review of the semi-annual monitoring declarations, the procurement information obtained during inspections, interviews, and data retrieved through forensic computer exploitation indicates that, in addition to the development of the local market mentioned earlier, during the period from 1999 to 2002, Iraq had rebuilt and further developed its procurement network for the acquisition of foreign materials, equipment and technology. The network consisted of: State-owned trading companies established and controlled by the Military Industrialization Commission, with branches in foreign countries; the Iraqi private sector and foreign trading companies operating in Iraq and abroad; multiple intermediaries; chains of foreign suppliers of items and materials; bank accounts; and transportation companies. In several instances, the Iraqi State-owned trading companies had shares in foreign trading companies or were closely affiliated with local private trading companies.

30. Despite the Council's prohibitions, from 1999 to 2002 Iraq procured materials, equipment and components from abroad for use in its missile programmes. In several instances, the items procured were used by Iraq for the production of Al Samoud 2 missiles that were determined by UNMOVIC in February 2003 to be proscribed. At least 380 SA-2 missile engines were imported for this programme by Iraq's prime missile establishment through an Iraqi State-owned trading company controlled by the Military Industrialization Commission and through a local Iraqi trading company and a foreign trading company.

31. The same Iraqi governmental trading company was involved, through a contract with two foreign private companies, in procuring components and equipment for the manufacture and testing of missile guidance and control systems, including inertial navigation systems with fibre-optic and laser ring gyroscopes and Global Positioning System equipment, accelerometers, ancillary items and a variety of production and testing equipment. One Iraqi trading company was also involved in the procurement (through private trading companies) of different pieces of missile-related production equipment and technology. In addition several foreign private subcontractors were responsible for the implementation of specific parts of the general contract.

32. From 1999 to 2002, Iraq also procured a variety of dual-use biological and chemical items and materials without United Nations authorization. They included the acquisition by Iraq of some corrosion-resistant chemical process equipment and biological research equipment, such as DNA sequencers, that were used by Iraq for

non-proscribed purposes. Although the goods were acquired by Iraq outside the framework of the mechanisms established under Security Council resolutions, most of them were later declared by Iraq to UNMOVIC in October 2002, when Iraq submitted its backlog of semi-annual monitoring declarations.

C. Importance of procurement verification

33. The history of Iraq's development of its ballistic missile programme and its chemical and biological weapons shows that the acquisition of foreign technology, equipment and materials was critical for those programmes. The forms of foreign procurement by Iraq varied from supplies of individual items and sales of licensed technology to the construction of turn-key facilities.

34. The experience of international verification in Iraq exemplifies the importance of procurement verification as one of the tools used to achieve a disclosure of proscribed weapons programmes. Despite Iraq's extensive concealment policy and practices, it was still possible to find procurement activity as an indicator of an undeclared programme.

35. Although the introduction of export licensing by individual States significantly slowed down and limited Iraq's procurement efforts prior to 1991, it did not stop them completely. The provisions involving only the licensing of exports on the grounds of end-user certificates without on-site verification were not able to solve fully the problem of possible shipments of dual-use items and materials to Iraq.

36. Iraq has demonstrated its ability to make adjustments and modifications to its procurement techniques to overcome trade restrictions — to a certain degree even under sanctions. Such an ability demonstrates that a combination of effective export control measures taken by all potential suppliers, coupled with an international mechanism for export/import notifications of dual-use items to Iraq and on-site verification, is required in order to provide a sufficient degree of confidence that dual-use items and materials will not be used for proscribed purposes.

Chart 1

Mechanics of Iraq's procurement

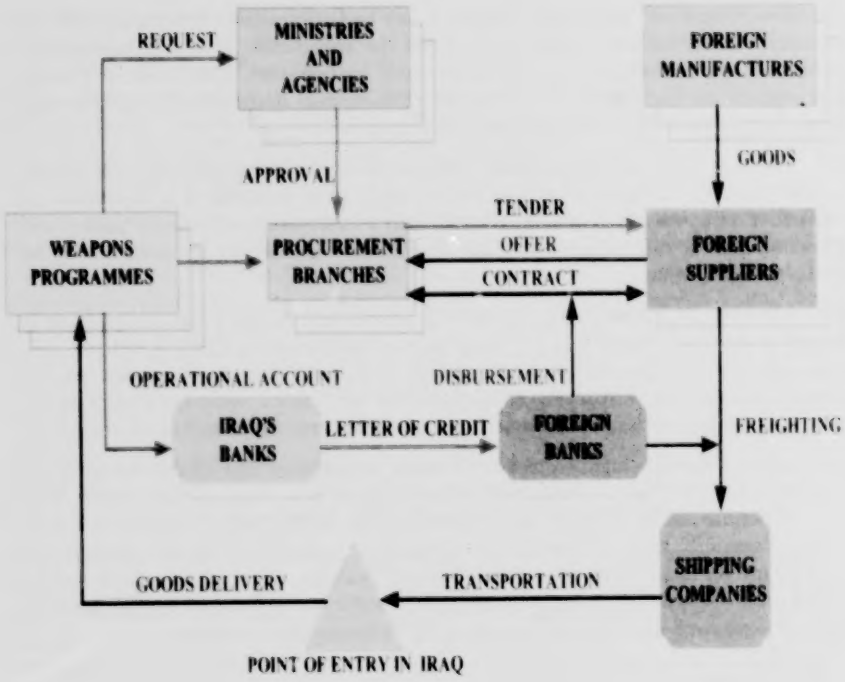

Chart 2

Iraq's procurement through brokers and middlemen

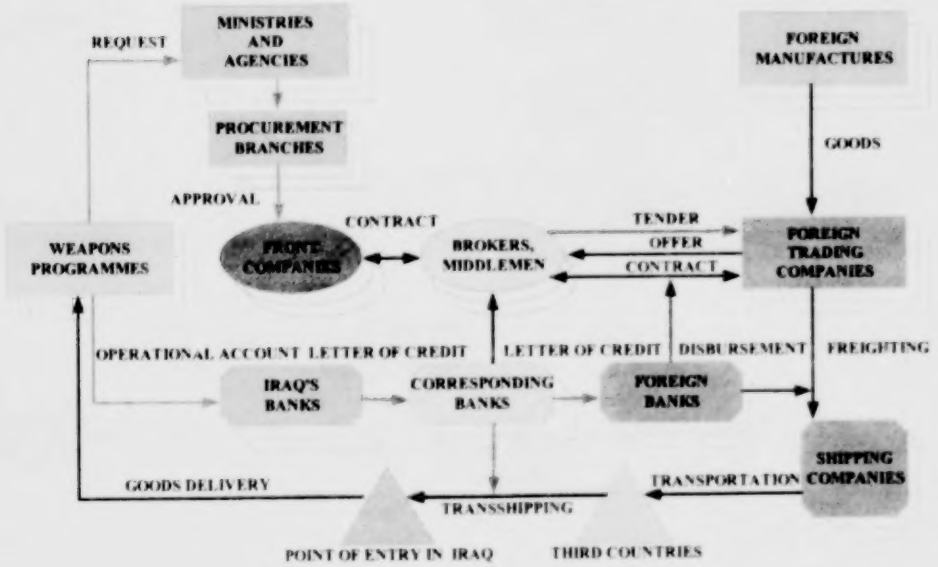

Chart 3

Iraq's procurement through governmental and private trading companies